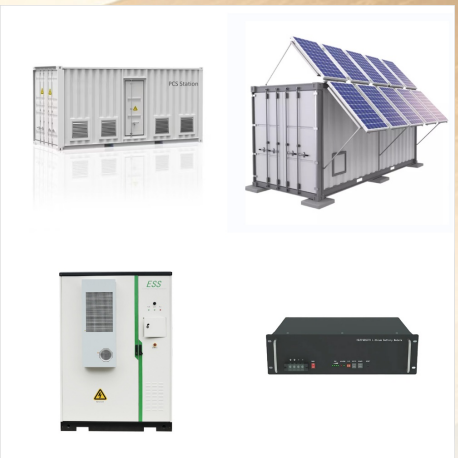
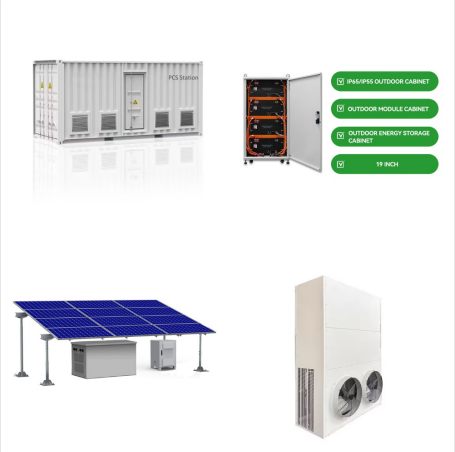


Tennyson, E. M., Garrett, J. L., Frantz, J. A., Myers, J. D., Bekele, R. Y., Sanghera, J. S., ??? Leite, M. S. (2015). Nanoimaging of Open-Circuit Voltage in Photovoltaic Devices. Advanced Energy Materials, 5(23), 1501142. doi:10.1002/aenm.201501142



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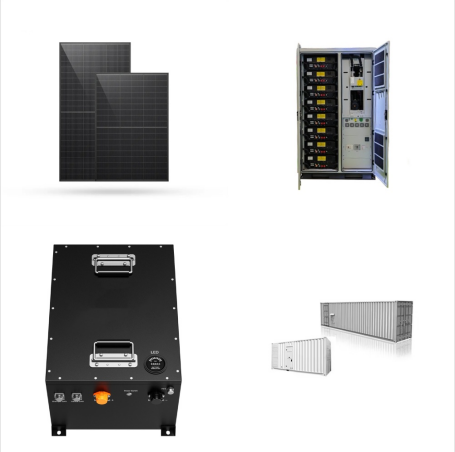
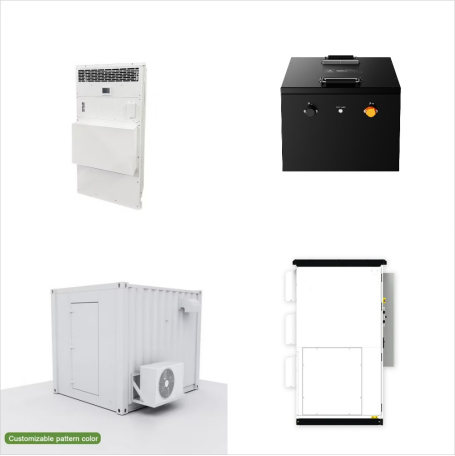
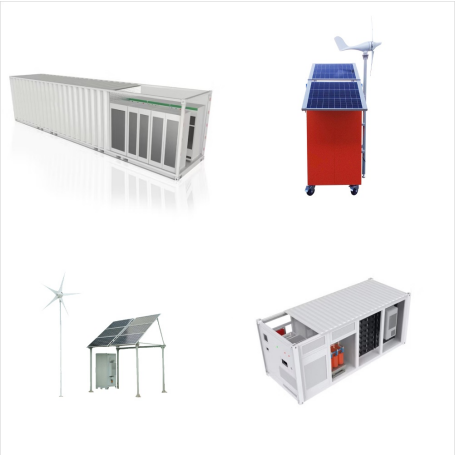


DOI: 10.1002/AENM.201570123 Corpus ID: 97250597; Solar Cells: Nanoimaging of Open???Circuit Voltage in Photovoltaic Devices (Adv. Energy Mater. 23/2015) @article{Tennyson2015SolarCN, title={Solar Cells: Nanoimaging of Open???Circuit Voltage in Photovoltaic Devices (Adv. Energy Mater. 23/2015)}, author={Elizabeth M. Tennyson and Joseph L. Garrett and Jesse A. Frantz ???

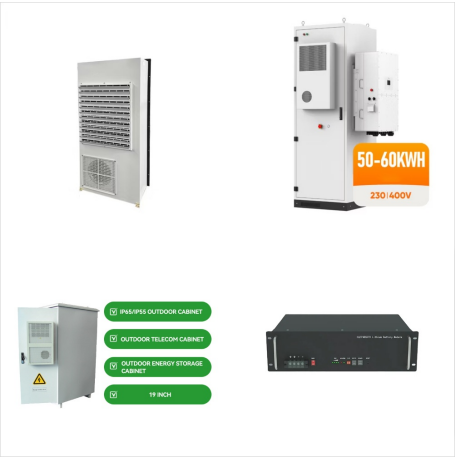
TENNYSON NANOIMAGING OF OPEN CIRCUIT VOLTAGE IN PHOTOVOLTAIC DEVICES



1. Introduction. Small-molecule organic photovoltaic (OPV) devices have been studied extensively and rapidly developed to take advantage of their low cost and flexibility compared with inorganic devices [1], [2], [3].Since Tang reported the two-layer copper-phthalocyanine (CuPc)-based OPV device with power conversion efficiency (PCE) of ?? 1/4 1% in ???

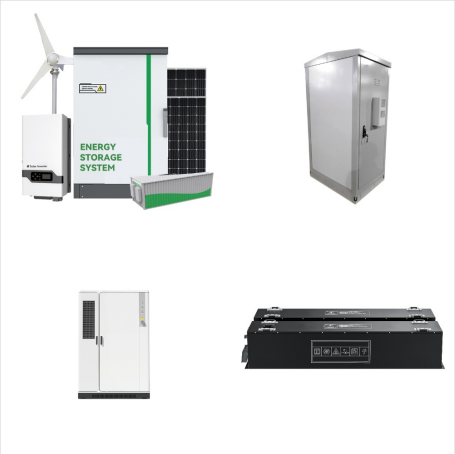


Nanoimaging of Open-Circuit Voltage in Photovoltaic Devices. Elizabeth Tennyson; Joseph L Garrett A novel imaging platform to determine the open-circuit voltage of solar cells with

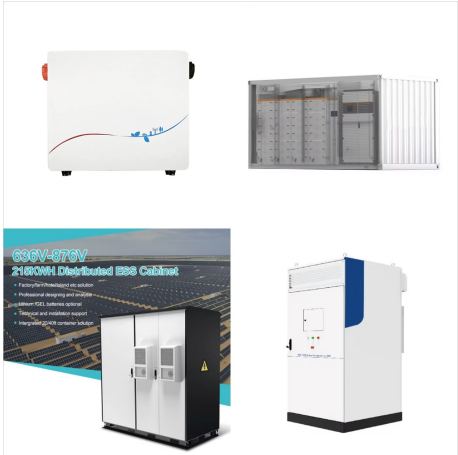


This work focuses on the extraction of the open circuit voltage (VOC) on photovoltaic nanowires by surface photovoltage (SPV) based on Kelvin probe force microscopy (KPFM) measurements. In a first approach, P-I-N ???

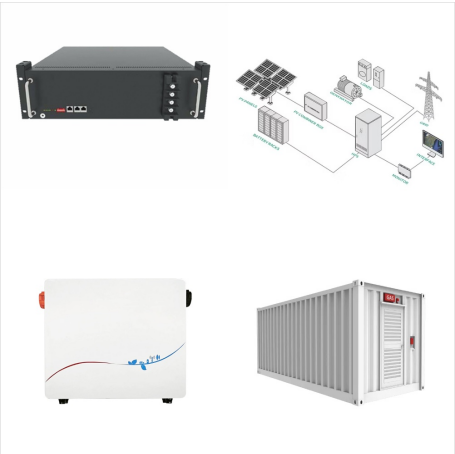
TENNYSON NANOIMAGING OF OPEN CIRCUIT VOLTAGE IN PHOTOVOLTAIC DEVICES



The open-circuit voltage evolution and charge transfer state interfaces in ternary organic photovoltaic blends are investigated using several model systems. The changes in subgap spectra from energetic disorder and increased population of higher energy states are analyzed and the lowest charge transfer state distribution is observed to shift due to local ???

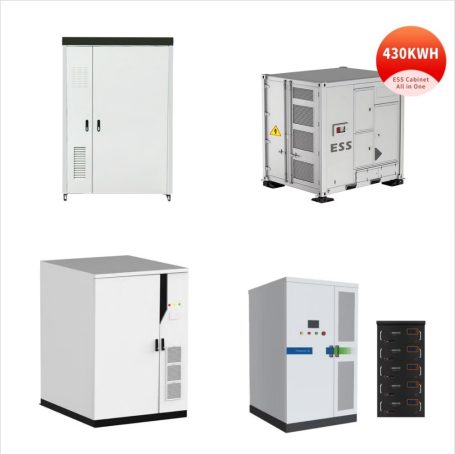


Real-time nanoscale open-circuit voltage dynamics of perovskite solar cells. JL Garrett, EM Tennyson, M Hu, J Huang, JN Munday, MS Leite 2020. 127: 2020: Nanoimaging of open-circuit voltage in photovoltaic devices. EM Tennyson, JL Garrett, JA Frantz, JD Myers, RY Bekele, JS Sanghera, Adv. Energy Mater 5 (23 EM Tennyson, K Frohna, WK

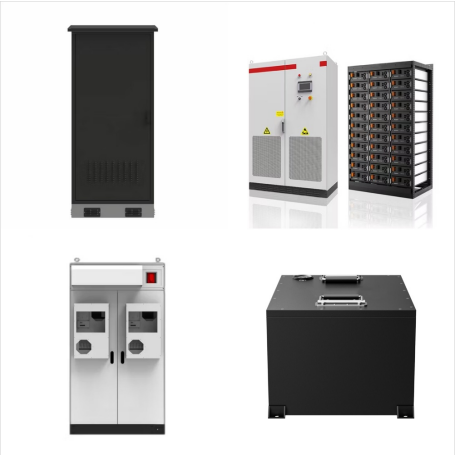


Moreover, the loss of local open-circuit voltage (V OC) in the bending mode was investigated by the carrier excitation mechanism. Furthermore, the degradation of photovoltaic parameters due to the

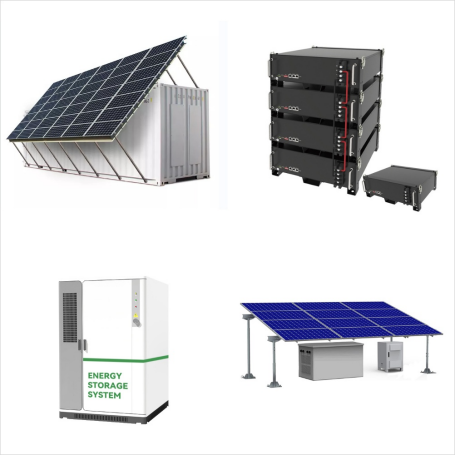
TENNYSON NANOIMAGING OF OPEN CIRCUIT VOLTAGE IN PHOTOVOLTAIC DEVICES



We explore the dependence of the dark current of C60-based organic photovoltaic (OPV) cells on molecular composition and the degree of intermolecular interaction of several molecular donor materials. The saturation dark current density, JS, is an important factor in determining the open circuit voltage, Voc. The Voc values of OPVs show a strong inverse correlation with JS. Donor ???

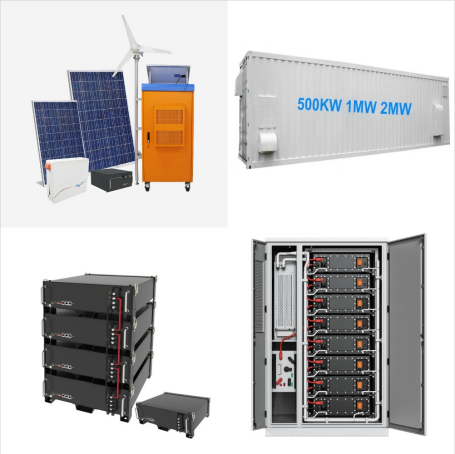


Our lab, in collaboration with others, has developed a new nanoimaging technique to map the open-circuit voltage in optoelectronic devices. This method can advance the current state-of-knowledge of the fundamental processes governing solar cell performance in order to enhance overall photovoltaic efficiencies.

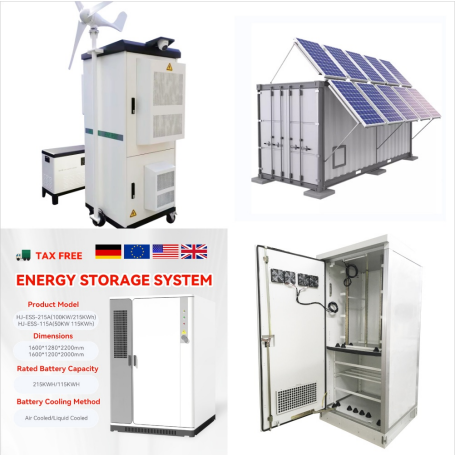


The influence of device structure on the open-circuit voltage of polyfluorene-based photovoltaic devices has been investigated. Bilayers of hole- and electron-accepting polyfluorenes have been fabricated using an aqueous "float-off" lamination technique and subsequently incorporated into organic photovoltaic devices with a range of cathodes and anodes. A scaling of the open ???

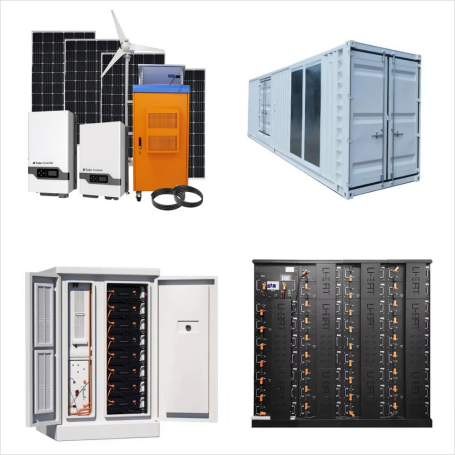
TENNYSON NANOIMAGING OF OPEN CIRCUIT VOLTAGE IN PHOTOVOLTAIC DEVICES



In article number 1501142, Marina S. Leite and co-workers report the use of an imaging platform to map open-circuit voltage in solar cells with a lateral spatial resolution of <100 nm that can be

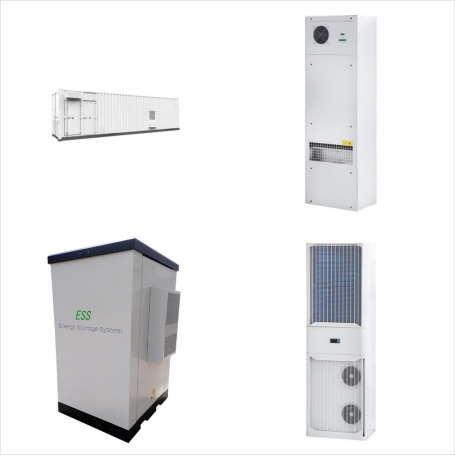


The open circuit voltage (V OC) is a critical and common indicator of solar cell performance as well as degradation, for panel down to lab-scale photovoltaics. Detecting V OC at the nanoscale is ??? Expand

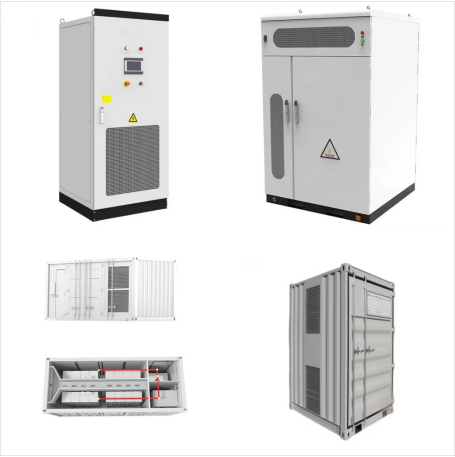


Open circuit voltage (Voc) of organic photovoltaic devices has been interpreted with either the metal-insulator-metal (MIM) model or the energy offset between highest occupied molecular orbital

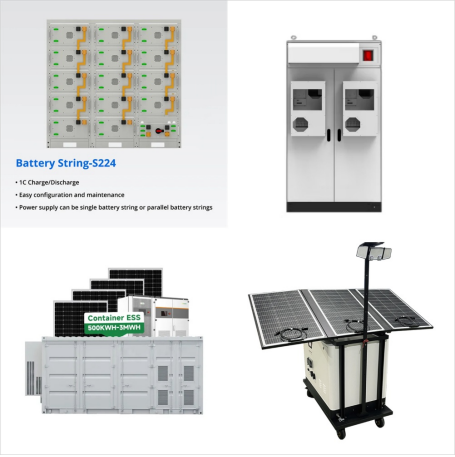
TENNYSON NANOIMAGING OF OPEN CIRCUIT VOLTAGE IN PHOTOVOLTAIC DEVICES



A novel imaging platform to determine the open???circuit voltage of solar cells with nanoscale spatial resolution is presented. Here, a variant of illuminated Kelvin probe force microscopy can be implemented to quantify local variations in the voltage of different solar cells. The new metrology can be applied to any optoelectronic device, and works in ambient environments.

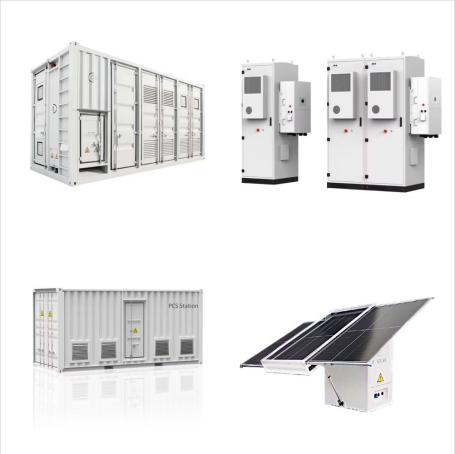


For most photovoltaic (PV) devices, the record short-circuit cur-rent density is near its theoretical limit; however, achieving a large open-circuit voltage has proven dif??? cult for nearly all photo voltaic technologies. [1,2]

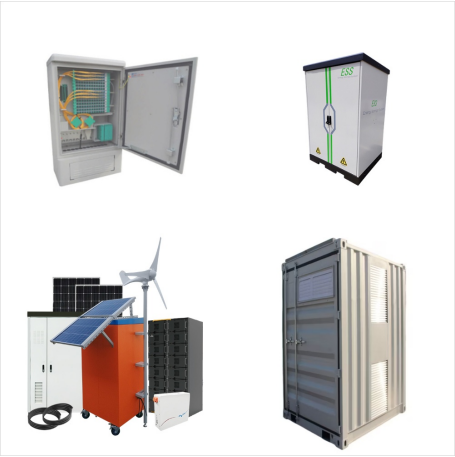


Tennyson, E. M., Garrett, J. L., Frantz, J. A., Myers, J. D., Bekele, R. Y., Sanghera, J. S., ??? Leite, M. S. (2015). Nanoimaging of Open-Circuit Voltage in Photovoltaic Devices. Advanced Energy ???

TENNYSON NANOIMAGING OF OPEN CIRCUIT VOLTAGE IN PHOTOVOLTAIC DEVICES



Halide perovskite semiconductors are enabling a wide variety of high-performing optoelectronic devices, including photovoltaics, light-emitting diodes, photodetectors and radiation detectors. However, these materials exhibit heterogeneity in their chemical, structural, morphological, and optoelectronic properties on a range of length scales



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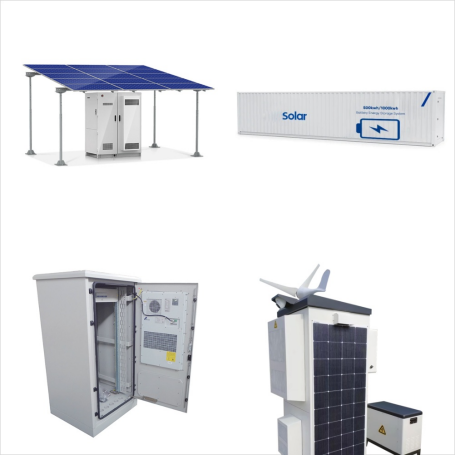
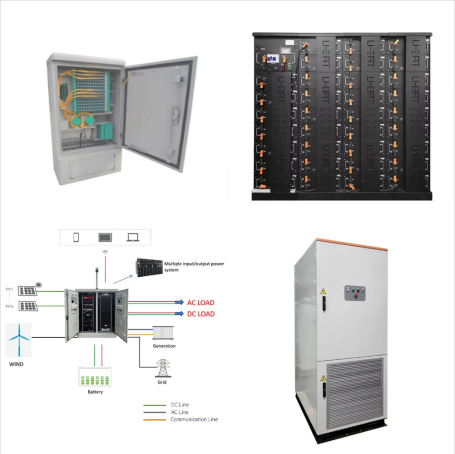


Dr Elizabeth (Beth) Tennyson is a senior research associate University of Cambridge's Chemical Engineering and Biotechnology Department within the Cambridge Centre for Inclusive Innovation.

TENNYSON NANOIMAGING OF OPEN CIRCUIT VOLTAGE IN PHOTOVOLTAIC DEVICES



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